

CLAIMS

1. a controller/driver comprising:

a work memory;

5 a graphic engine converting externally received image data into first bitmap data, and storing said bitmap data into said work memory;

a display memory receiving and storing second bitmap data developed from said first bitmap data
10 stored in said work memory; and

a driver circuit which receives said second bitmap data from said display memory, and drives a display panel in response to said second bitmap data received from said display memory.

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2. The controller/driver according to claim 1, wherein said image data is described in a vector format.

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3. The controller/driver according to claim 1, wherein said image data includes compressed image data.

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4. The controller/driver according to claim 1, wherein said second bitmap data is developed on said display memory through data transfer of said first bitmap data from said work memory, and

wherein said data transfer of said first
bitmap data from said work memory to said display
memory is performed such that a set of data bits of
said first bitmap data are transferred at the same
5 time.

5. The controller/driver according to claim 4,
wherein said first bitmap data includes a plurality
of line data each associated with a line of pixels
10 of an image represented by said second bitmap data
to be displayed, and

wherein said data transfer of said first
bitmap data from said work memory to said display
memory is performed such that each of said line data
15 is transferred at the same time.

6. The controller/driver according to claim 5,
further comprising:

a latch receiving said line data from said work
20 memory, and temporally storing said received line
data,

wherein said display memory received said line
data from said latch.

25 7. The controller/driver according to claim 5,
further comprising:

a controller controlling said work memory,

said display memory, and said driver circuit so that
said data transfer of said first bitmap data from said
work memory to said display memory is synchronous with
readout of said second bitmap data from said display
5 memory to said driver circuit.

8. The controller/driver according to claim 7,
wherein said data transfer of said first bitmap data
from said work memory to said display memory is
10 initiated in response to activation of a frame
synchronization signal indicating to start
displaying each image frame.

9. The controller/driver according to claim 7,
15 wherein said controller controls said display memory,
and said driver circuit so that said data transfer
of said first bitmap data from said work memory to
said display memory does not overrun said readout of
said second bitmap data from said display memory to
20 said driver circuit.

10. The controller/driver according to claim 1,
wherein said work memory includes:

25 a plurality of first bit lines,
a plurality of first word lines, and
a plurality of first memory cells disposed at
respective intersections of said first bit lines and

first word lines to store therein said first bitmap data,

wherein said display memory includes:

a plurality of second bit lines,

5 a plurality of second word lines, and

a plurality of second memory cells disposed at respective intersections of said second bit lines and second word lines to store therein said second bitmap data,

10 wherein a number of said first bit lines is same as that of said second bit lines, and

wherein said first bit lines are connected to said second bit lines, respectively.

15 11. The controller/driver according to claim 10, wherein a number of said first word lines is identical to that of said second word lines.

12. The controller/driver according to claim 10,
20 further comprising a controller controlling said work memory, and said display memory, and said driver circuit,

wherein said driver circuit is connected to said second bit lines, and

25 wherein said controller is adapted to deactivates said display memory to allow said first bitmap data to be transmitted from said work memory

to said driver circuit through said second bit lines.

13. The controller/driver according to claim 12,
wherein said controller is adapted to successively
5 change portions of said first and second bitmap data
stored in said work memory and said display memory
to be transferred to said driver circuit.

14. The controller/driver according to claim 1,
10 further comprising a processing circuit which
processes said bitmap data received from said work
memory to develop said bitmap data to be displayed
and stores said developed bitmap data in said display
memory.

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15. The controller/driver according to claim 1,
further comprising another processing circuit which
processes said bitmap data stored in said display
memory, and provides said processed bitmap data for
20 said work memory.

16. A display device comprising:
a controller/driver; and
a first display panel including:
25 a plurality of first data lines, and
a plurality of first gate lines,
a second display panel including:

a plurality of second data lines
respectively connected to said first data lines, and

a plurality of second gate lines,

wherein said controller driver includes:

5 a work memory comprising a plurality of
first bit lines,

a graphic engine converting externally
received image data into first bitmap data to store
into said work memory,

10 a display memory storing a second bitmap
data and comprising a plurality of second bit lines
respectively connected to said first bit lines,

a data line driver driving said first data
lines,

15 a first gate line driver driving said first
gate lines,

a second gate line driver driving said
second gate lines, and

a controller circuit controlling said work
20 memory, said display memory, said data line driver,
and said first and second gate line drivers,

wherein said controller circuit is adapted to
deactivate said display memory to thereby allow said
first bitmap data to be transmitted to said data line
25 driver through said second bit lines, and to allow
said second bitmap data to be transmitted from said
display memory to said data line driver, and

wherein said controller circuit is adapted to control said first and second gate line drivers to allow said data line driver to drive said second data lines of said second display panel through said first
5 data lines of said first display panel.

17. The display device according to claim 16,
wherein said controller circuit is adapted said first and second gate line drivers to allow the same image
10 to be displayed on said first and second display panels in response to one of said first and second bitmap data.